

09943075 . 012902

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FIG. 1A

FIG. 1A-2

FIG. 1A-1

FIG. 1A-1

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FIG. 1A-2

ՏԵՇԱՅԻ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ

၂၃၀ မြန်မာစာတမ်း၊ ၁၇၈၅

AAACACGAGT CGTACGAGCC AATAGGAAC ACCGGCTAA GGGAAAGGC CTCAGGTTT TCTCGGCTT

P I L O P D N S I M D F I U I C K G A I I P I E R A C T I I S O P I C O I A Q H A V

L 501 S H E A C R I H R Y G Y F R A T I T I U D G I L E U H I I O U A R O U P I

אָמֵן וְאָמַן כִּי־בְּרֹכָה יְהוָה בְּרוּךְ הוּא

GGGTTTG GGGCAACAT TGGCTGTG CTCCTTAC ACGCTTACG TATGGCTTA ATGGGACCTT CAACTTTCAC CTCACGGTC AACATGGAGT GCGGGGAGCAA 1080

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| EXON | BAC Start | BAC Stop | cDNA Start | cDNA Stop | Exon Length | |
|------|-----------|----------|------------|-----------|-------------|---|
| 1 | 83294 | 83455 | 1 | 162 | 162 | poly A signal is position 111614-111619 |
| 2 | 89834 | 89986 | 163 | 314 | 152 | |
| 3 | 90696 | 90839 | 315 | 458 | 144 | |
| 4 | 93419 | 93594 | 459 | 634 | 176 | translation start (ATG) is: |
| 5 | 96509 | 96665 | 635 | 791 | 157 | cdDNA: 92 |
| 6 | 96983 | 97300 | 792 | 1109 | 318 | Gene: 833385 |
| 7 | 103044 | 103142 | 1110 | 1208 | 99 | |
| 8 | 104413 | 104515 | 1209 | 1311 | 103 | |
| 9 | 106494 | 106702 | 1312 | 1520 | 209 | |
| 10 | 110048 | 110141 | 1521 | 1614 | 94 | |
| 11 | 110592 | 111633 | 1615 | 2656 | 1042 | |

K-D

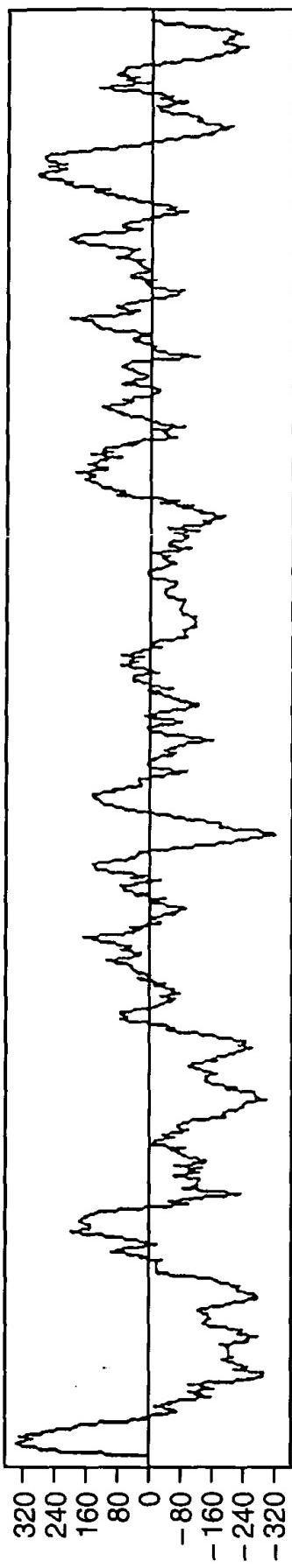


FIG. 1B

FIG. 1C

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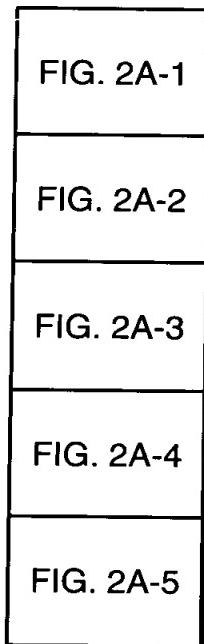


FIG. 2A

| | | | | | | | | | |
|-------|------------|--------------|------------|-------------|------------|-------------|-------------|--------|-----|
| rat | ATGGAAAGTC | TCTGGGGGT | CCTGGTATT | CTGCTGCCAG | CTGCAGGACT | GCCGCCAAGC | GGTTC | 75 | |
| mouse | ATGGAAAGTC | TCTGGGGGT | CCTGGGATT | CTGCTGCCAG | CTGCAGGACT | GCCGCCAAGC | GATTT | 75 | |
| human | ATGGAAAGTC | TCTACTATT | CCTGGGATT | CTGCTGCCAG | CTGCAGGATT | GCCACTTGAT | GCCCCAAC | GATTT | 75 |
| rat | CGTGTGTGC | TGGCCATGA | GCAGTATCCG | GATCACATGA | GGGAGAACAA | CCAATACGT | GGCTGGTCTT | CAGAT | 150 |
| mouse | CGTGTGTGC | TGGCCATGA | ACAGTATCCC | GATCACATGA | GAGAGCACAA | CCAATACGT | GGCTGGTCTT | CGGAT | 150 |
| human | CATGATGTGC | TGGCCATGA | AGAACCTCT | GCTTACATGA | GGGAGCACAA | TCAATTAAAT | GGCTGGTCTT | CTGAT | 150 |
| rat | AAAATGAAT | GGGATGAACA | GCTGTATCCA | GTGTGGAGGA | GGGGAGGGG | CAGATGGAAAG | GACTCCTGGG | AAGGA | 225 |
| mouse | AAAATGAAT | GGGATGAACA | CCTGTATCCA | GTGTGGAGGA | GGGGAGACGG | CAGGTGGAAAG | GACTCCTGGG | AAGGA | 225 |
| human | AAAATGAAT | GGAAATGAAAAA | ACTCTACCA | GTGTGGAACCC | GGGGAGACAT | GAGGTGGAAA | AACTCCTGGAA | AGGGAA | 225 |
| rat | GGCCGTGTGC | AGGCAGCCCT | AACCAGTGAT | TCACCGGCCT | TGGTGGTTTC | CAATATCACC | TTCGTAGTGA | ACCTG | 300 |
| mouse | GGCCGTGTGC | AGGCAGTCCT | GACCAGTGAC | TCACCGGCCTC | TGGTGGTTTC | CAATATCACT | TTTGTGGTGA | ACCTG | 300 |
| human | GGCCGTGTGC | AGGCAGTCCT | GACCAGTGAC | TCACCGGCC | TCGTGGCTC | AAATAAACAA | TTTGGGCTA | ACCTG | 300 |

FIG. 2A-1

| | | |
|-------|--|-----|
| rat | GTTCCCCA GATGCCAGAA GGAAGGATGCC AACGGCAATA TCGTCTATGA GAGGAACACTGC AGAAAGTGATT TGGAG | 375 |
| mouse | GTTCCCCA GATGCCAGAA GGAAGGATGCC AACGGCAATA TCGTCTATGA GAGGAACACTGC AGGAATGATT TGGGA | 375 |
| human | ATATTCCCTA GATGCCAAA GGAAGGATGCC AACGGCAACA TAGTCTATGA GAAGAACACTGC AGAAATGAGG CTGGT | 375 |
| rat | CTGGCTTCTG ACCCGTATGT CTACAACTGG ACCACAGGG CAGACGGATGA GGACTGGAA GACAACACCA GCCAA | 450 |
| mouse | CTGACATCTG ACCTGGCATGT CTACAACTGG ACTGGCAGGG CAGATGATGG TGACTGGAA GATGGCACCA GCCGA | 450 |
| human | TTATCTGCTG ATCCATATGT TTACAACTGG ACAGCATGGT CAGGGACAG TGACGGGAA AATGGCACCG GCCAA | 450 |
| rat | GGCCAGCACC TCAGGTCCC CGACGGGAAG CCCTTCCCTC GCCCCCACGG ACGGAAAGAAA TGGAACCTTCG TCTAC | 525 |
| mouse | AGCCAGCATC TCAGGTCCC GGACAGGAGG CCCTTCCCTC GCCCCCATGG ATGGAAAGAAA TGGAGCTTGT TCTAC | 525 |
| human | AGCCATCATTA ACGTCTTCCC TGATGGAAA CCTTTTCTC ACCACCCCCC ATGGAAAGA TCGAATTTCGA TCTAC | 525 |
| rat | GTCTTCCACA CACTGGTCA GTATTTCAA AAGCTGGTC AGTGTTCAGC ACGAGTTTCT ATAACACAG TCAAC | 600 |
| mouse | GTCTTCCACA CACTGGCCA GTATTCCAA AAACCTGGTC GTGTTCAGC ACGGGTTTCT ATAACACAG TCAAC | 600 |
| human | GTCTTCCACA CACTGGTCA GTATTCCAG AAATTGGAC GATGTTCAGT GAGAGTTTCT GTGAACACAG CCAAT | 600 |
| rat | TTGACAGTTG GCCCTCAGGT CATGGAAAGTG ATTGTCTTTC GAAGACACGG CCCGGCATACTTCCATCT CCAA | 675 |
| mouse | TTGACAGTTG GCCCTCAGGT CATGGAAAGTG ACTGTCTTTC GAAGATACGG CCCGGCATACTTCCATCT CGAAG | 675 |
| human | GTGACACTTG GGCCTCAACT CATGGAAAGTG ACTGTCTACA GAAGACATGG ACGGGCATAT GTTCCCATCG CACAA | 675 |

FIG. 2A-2

| | | | | | | | | | |
|-------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|------|
| rat | GTGAAAGACG | TGTATGTGAT | AACAGATCAG | ATCCCTATAT | TCGTGACCAT | GTACCGAGAAG | AATGACCGGA | ACTCG | 750 |
| mouse | GTGAAAGATG | TGTATGTGAT | AACAGATCAG | ATCCCTGTAT | TCGTGACCAT | GTACCGAGAAG | AATGACAGGA | ACTTG | 750 |
| human | GTGAAAGATG | TGTACCTGGT | AACAGATCAG | ATCCCTGAT | TTGTGACTAT | GTTCAGAAG | AACGATCGAA | ATTCA | 750 |
| rat | TCTGATGAAA | CCTTCTCAG | AGACCTCCCC | ATTTCTCG | ATGTCCTCAT | TCACGGATCCC | AGTCATTCTCC | TCAAC | 825 |
| mouse | TCTGATGAGA | TCTTCTCAG | AGACCTCCCC | ATCGTCTCG | ATGTCCTCAT | TCATGATCCC | AGCCACCTTCC | TCAAC | 825 |
| human | TCCGACGAAA | CCTTCTCAA | AGATCTCCCC | ATTATGTTG | ATGTCCTGAT | TCATGATCCT | AGCCACCTTCC | TCAAT | 825 |
| rat | TACTCTGCCA | TTTCCCTACAA | GTGGAACCTT | GGGGACAACAA | CTGGCCTGTT | TGTCTCCAAC | AATCACACTT | TGAAT | 900 |
| mouse | GAECTGCCA | TTTCCCTACAA | GTGGAACCTT | GGGGACAACAA | CTGGCCTGTT | TGTCTCCAAC | AATCACACTT | TGAAT | 900 |
| human | TATTCTACCA | TTAACTACAA | GTGGAGCTTC | GGGGATAATA | CTGGCCTGTT | TGTTTCCACC | AATCATACTG | TGAAT | 900 |
| rat | CACACGTATG | TGCTCAATGG | AACCTTCAAC | TTAACCTCA | CCGTGAAAC | TGCAGTGGCG | GG----- | -ACCA | 966 |
| mouse | CACACTTATG | TGCTCAATGG | AACCTTCAAC | CTAACCTCA | CCGTGAAAC | TGCAGTGGCC | GG----- | -GCCA | 966 |
| human | CACACGTATG | TGCTCAATGG | AACCTTCAAGC | CTAACCTCA | CTGTGAAAGC | TGCAGCACCA | GGACCTGTGTC | GGCCA | 975 |
| rat | -TGGC-CC-T | CACCCACACC | TTCGCCTCT | TCTTCGACTT | CTCCCTTC--- | ---GCCTGCA | TCTTCGCCCT | CA--- | 1029 |
| mouse | -TGGC-C--T | --CCC---CC | TTCGCCTCG | ACTCCGCCCT | CACCTCAAC | TCCGCCCTTA | CCTTCGCCCT | CACCT | 1032 |
| human | CGGCCACCAC | CACCCAGACC | TTC----- | ----- | ----- | AA----- | A----- | -ACC- | 1004 |

FIG. 2A-3

| | | | | | | | | | |
|-------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------|------|
| rat | ---CCCACAT | TATCAACACC | TAGTCCCTCT | TTAATGCCATA | CTGGCTACAA | ATCCATGGAG | CTGAGTGACA | TTTCC | 1101 |
| mouse | TTGCCAACAT | TATCAACACC | TAGCCCTCT | TTAATGCCATA | CTGGTTACAA | ATCCATGGAG | CTGAGTGACA | TTTCC | 1107 |
| human | -----CACC | -----CACC | ----CCTCT | TTAGGACCTG | CTGGTACAA | CCCCCTGGAG | CTGAGTAGGA | TTCCT | 1059 |
| rat | AATGAAAAC | GCCGAATAAA | CAGATAAGGT | TACTTCAGAG | CCACCATCAC | AATTCTAGAT | GGAATCCTAG | AAGTC | 1176 |
| mouse | AATGAAAAC | GCCGAATAAA | CAGATAAGGC | TACTTCAGAG | CCACCATCAC | AATTCTAGAG | GGGATCCTGG | AAGTC | 1182 |
| human | GATGAAAAC | GCCAGATTAA | CAGATAAGGC | TACTTTCAAG | CCACCATCAC | AATTCTAGAG | GGAATCTTAG | AGTT | 1134 |
| rat | AACATCATCC | AGGTAGCGAGA | TGTCCCCAATC | CCCACACTGC | AGCCTGACAA | CTCAGTGTG | GACTTCATTG | TGACC | 1251 |
| mouse | AGCATCATGC | AGATAGCGAGA | TGTCCCCATG | CCCACACCCGC | AGCCTGCCAA | CTCCCTGTATG | GACTTCACTG | TGACC | 1257 |
| human | AACATCATCC | AGATGACAGA | CGTCCGTGATG | CGGGTCCCAT | GGCCTGAAAG | CTCCCTAATA | GACTTTGTGCG | TGACC | 1209 |
| rat | TGCAAAGGGG | CCACTCCAC | GGAAAGCCTGT | ACGATCATCT | CTGACCCAC | CTGGCAGATC | GCCCAGAACAA | GGGTG | 1326 |
| mouse | TGCAAAGGGG | CCACCCCAT | GGAAAGCCTGT | ACGATCATCT | CCGACCCAC | CTGGCAGATC | GCCCAGAACCC | GGGTG | 1332 |
| human | TGCCAAGGGA | GCATTCCAC | GGAGGTCTGT | ACCATCATTT | CTGACCCAC | CTGGCAGATC | ACCCAGAACAA | CAGTC | 1284 |
| rat | TGCAAGCCGG | TGGCTGTGGA | TGAGCTGTGCG | CTCCTGTCCG | TGAGGAGAGC | CTTCATGGG | TCCGGCACGT | ACTGT | 1401 |
| mouse | TGCAAGCCCTG | TGGCTGTGGA | TGGCTGTGCG | CTGCTGTCTG | TGAGAAGAGC | CTTCATGGG | TCTGGCACCT | ACTGT | 1407 |
| human | TGCAGCCCTG | TGGATGTGGA | TGAGATGTGCT | CTGCTGACTG | TGAGACGAAC | CTTCATGGG | TCTGGCACGT | ACTGT | 1359 |

FIG. 2A-4

| | | | | | | | | | |
|-------|-------------|------------|-------------|------------|-------------|-------------|------------|-------|------|
| rat | GTGAATTCA | CTCTGGGAGA | CGATGCAAGC | CTGGCCCTCA | CCAGGCCCT | GATCTCTATC | CCTGGCAAAG | ACCTA | 1476 |
| mouse | GTGAATTCA | CTCTGGGAGA | TGATGCAAGC | CTGGCCCTCA | CCAGCACCCCT | GATCTCTATC | CCTGGCAAAG | ACCCA | 1482 |
| human | GTGAACCTCA | CCCTGGGAA | TGACACAAGC | CTGGCTCTCA | CGAGCACCCCT | GATTCTGT | CCTGACAGAG | ACCCA | 1434 |
| rat | GGCTCCCTC | TGAGAACAGT | GAATGGTGT | CTGATCTCCA | TTGGCTGCCT | GGCCATGTT | GTCACCCTGG | TTACC | 1551 |
| mouse | GAECTCCCTC | TGAGAACAGT | GAATGGTGT | CTGATCTCCA | TCGGCTGCCT | GGCTGTGTT | GTCACCCTGG | TTACC | 1557 |
| human | GCCTCGCCTT | TAAGGATGGC | AACAGTGGC | CTGATCTCCC | TTGGCTGCCT | GGCCATATT | GTCACTGTGA | TCTCC | 1509 |
| rat | ATCTGCTGT | ACAAAAAAC | CAAGACGTAC | AAGCCAATAG | GAAACTGCAC | CAGGAACGTG | GTCAAGGGCA | AAGGC | 1626 |
| mouse | ATCTGCTGT | ACAAAAAAC | CAAGGGTAC | AAGCCAATAG | GAAACTGCC | CAGGAACACG | GTCAAGGGCA | AAGGC | 1632 |
| human | CTCTGCTGT | ACAAAAAAC | CAAGGAATAC | AACCCAATAG | AAATAAGTCC | TGGGAATGTG | GTCAAGGGCA | AAGGC | 1584 |
| rat | CTGAGTGT | TTCTCAGCCA | TGCCAAAAGCC | CCGTTCTCCC | GAGGAGACCC | GGAGAAGGAT | CCACTGCTCC | AGGAC | 1701 |
| mouse | CTGAGTGT | TCCTCAGTCA | CGCGAAAGCC | CCGTTCTCCC | GAGGAGACCA | GGAGAAGGAT | CCATTGCTCC | AGGAC | 1707 |
| human | CTGAGTGT | TTCTCAACCG | TGCCAAAAGCC | GTGTTCTCCC | CGGGAAAACCA | GGAAAAAGGAT | CCGCTACTC- | --AA | 1655 |
| rat | AAGCCATGGA | TGCTCTAA | --- | ----- | - | - | - | - | 1719 |
| mouse | AAGCCAAAGGA | CACTCTAA | --- | ----- | - | - | - | - | 1725 |
| human | AAACCAAGAA | ---TTTAAAG | GAGTTCTTA | A | 1683 | | | | |

FIG. 2A-5

| | | | | | | | |
|-------|------------|------------|-------------|-------------|------------|-----|-----------|
| rat | MESLCGVLVF | LLAAGLPLQ | AAKFRDVLG | HEQYPDHMRE | NNQLRGWSSD | 50 | FIG. 2B-1 |
| mouse | MESLCGVLG | LLAAGLPLQ | AAKFRDVLG | HEQYPDHMRE | HNQLRGWSSD | 50 | |
| human | MECLYYFLGF | LLAARLPLD | AAKRFHDVLG | NERPSAYMRE | HNQLNGWSSD | 50 | |
| rat | ENEWDEQLYP | VWRRGEGRWK | DSWEGGRVQA | ALTSDSPALV | GSNITFVVNL | 100 | FIG. 2B-2 |
| mouse | ENEWDEHLYP | VWRRGDGRWK | DSWEGGRVQA | VLTSDFSPALV | GSNITFVVNL | 100 | |
| human | ENDWNEKLYP | VWKRGDMRWK | NSWKGGGRVQA | VLTSDSPALV | GSNITFAVNL | 100 | |

| | | | | | | | |
|-------|------------|-------------|-------------|-------------|-------------|-----|--|
| rat | VFPRCQKEDA | NGNIVYERNIC | RSDLELASDP | YVYNWTTGAD | DEDWEDNTSQ | 150 | |
| mouse | VFPRCQKEDA | NGNIVYEKNC | RNDLGLTSDL | HVYNWTAGAD | DGDWEDGTSR | 150 | |
| human | IFPRCQKEDA | NGNIVYEKNC | RNEAGLSADP | YVYNWTAWSE | DSDGENGTGQ | 150 | |
| rat | GQHLRFPDGK | PFPYPHGRKK | WNFVYVFHTL | GQYFQKLGQC | SARVSINTVN | 200 | |
| mouse | SQHLRFPDRR | PFPYPHGWKK | WSFVYVFHTL | GQYFQKLGRC | SARVSINTVN | 200 | |
| human | SHHNVPFDGK | PFPYPGWRR | WNFIYVFHTL | GQYFQKLGRC | SVRVSVNTAN | 200 | |
| rat | LTVGPQVMEV | IVFRRHGRAY | IPIISKVKDYY | VITDQIPIFV | TMYQKNDRNS | 250 | |
| mouse | LTAGPQVMEV | TVFRRGRAY | IPIISKVKDYY | VITDQIPVFV | TMSQKNDRNL | 250 | |
| human | VTLGPQLMEV | TVYRRHGRAY | VPIAQVKDYY | VVTDQIPVFV | TMFQKNDRNS | 250 | |
| rat | SDETFLRDLP | IFFDVLIHDP | SHFLNYSAILS | YKWNNFGDNTG | LFVNNHHTLN | 300 | |
| mouse | SDEIFLRDLP | IVFDVLIHDP | SHFLNDSAIS | YKWNNFGDNTG | LFVNNHHTLN | 300 | |
| human | SDETFLKDLP | IMFDVLIHDP | SHFLNYSTIN | YKWSFGDNTG | LFVSTNHHTVN | 300 | |

FIG. 2B-1

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| | | | | | | |
|-------|-------------|-------------|-------------|-------------|-------------|-----|
| rat | HTYVLNGTFN | FNLTVQTAVP | GPCPSPTPS- | -PSSSTSPSP | ASSPSPTLST | 348 |
| mouse | HTYVLNGTFN | LNLTVQTAVP | GPCPPPSPPST | PPSPSTPPPLP | SPSPLPTLST | 350 |
| human | HTYVLNGTFN | LNLTVKAAP | GPCPPPPP-- | -----PPRP | -----SK | 334 |
| rat | PSPSLMPPTGY | KSMELSDISN | ENCRINRGY | FRATITIVDG | ILEVNIIQVA | 398 |
| mouse | PSPSLMPPTGY | KSMELSDISN | ENCRINRGY | FRATITIVEG | ILEVSIMQIA | 400 |
| human | PTPSLGPGAD | NPLELSRIPD | ENCQINRYGH | FQATITIVEG | ILEVNIIQMT | 384 |
| rat | DVPIIPTLQPD | NSLMDFIVTC | KGATPTEACT | IISDPTCQIA | QNRVCSPVAV | 448 |
| mouse | DVPMPPTQPQA | NSLMDFTVTC | KGATPMEEACT | IISDPTCQIA | QNRVCSPVAV | 450 |
| human | DVLMPPWPPE | SSLIDFVVTC | QGSIPTEVCT | IISDPTCEIT | QNTVCSPVDV | 434 |
| rat | DELCLLSVRR | AFNGSGTGYCV | NFTLGDDASL | ALTSALISIP | GKDLGSPLRT | 498 |
| mouse | DGLCLLSVRR | AFNGSGTGYCV | NFTLGDDASL | ALTSTLISIP | GKDPPDSPLRA | 500 |
| human | DEMCLLTVRR | TFNGSGTGYCV | NLTLGDDTSL | ALTSTLISVP | DRDPASPLRM | 484 |
| rat | VNGVLISIGC | LAMEVTMVTI | LLYKKHKTYK | PIGNCTRNVV | KGKGGLSVFLS | 548 |
| mouse | VNGVLISIGC | LAVLVTMVTI | LLYKKHKAYK | PIGNCPRNTV | KGKGGLSVLRL | 550 |
| human | ANSALISVGCG | LAIFVTVISL | LVYKKHKEYN | PIENS PGNVV | RSKGGLSVFLN | 534 |
| rat | HAKAPFSRGD | REKDPLLQDK | PW--ML | 572 | | |
| mouse | HAKAPFFRGD | QEKDPLLQDK | PR--TL | 574 | | |
| human | RAKAVFFPGN | QEKDPLLKNQ | EFKGVS | 560 | | |

FIG. 2B-2

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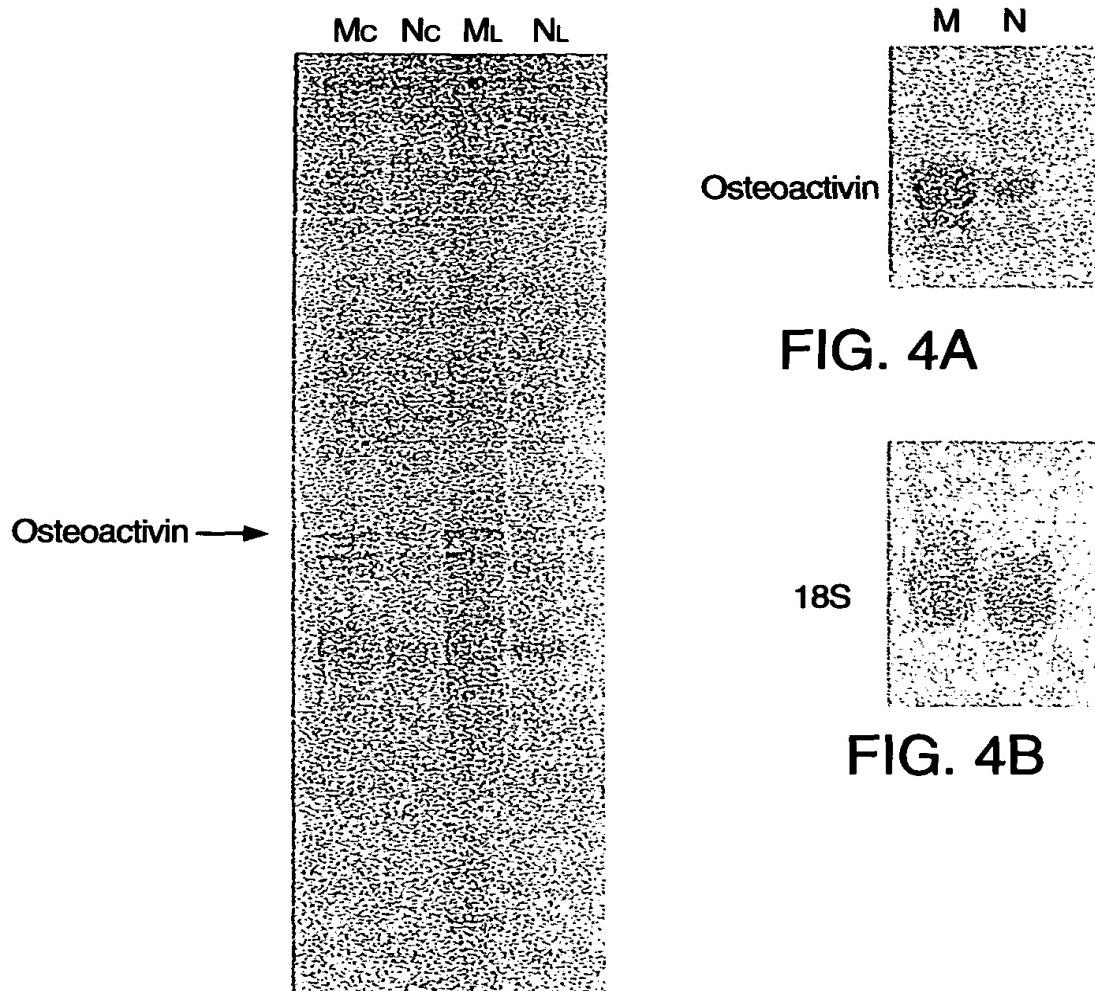


FIG. 3

FIG. 4A

FIG. 4B

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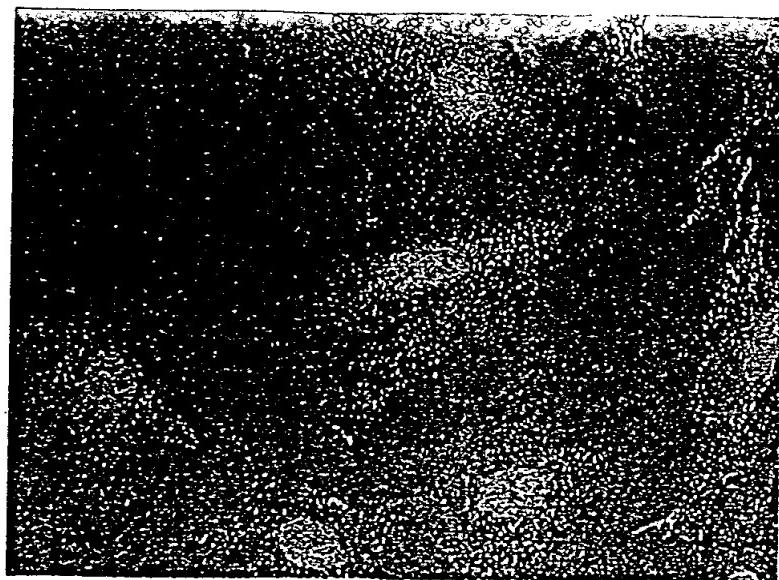


FIG. 5



FIG. 5A

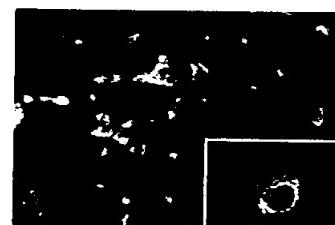


FIG. 5B

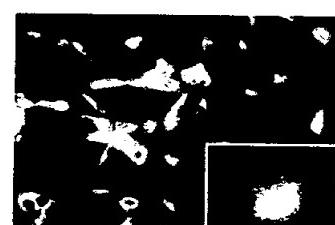


FIG. 5C

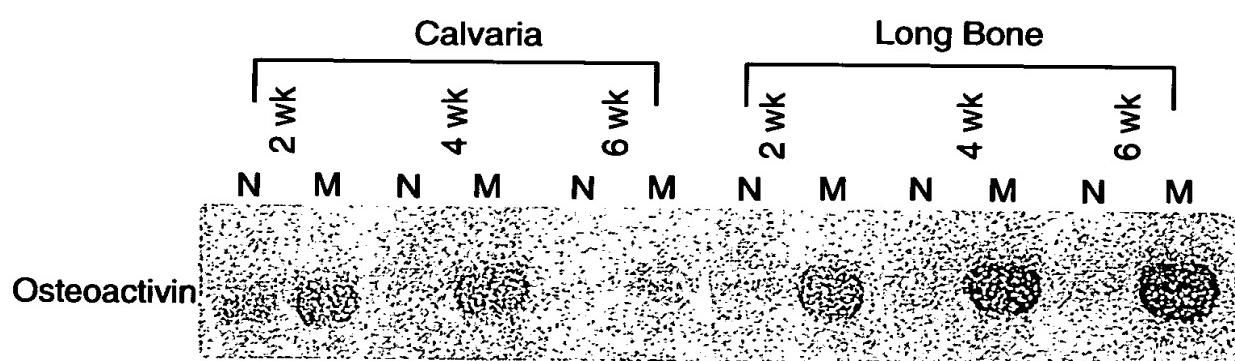


FIG. 6

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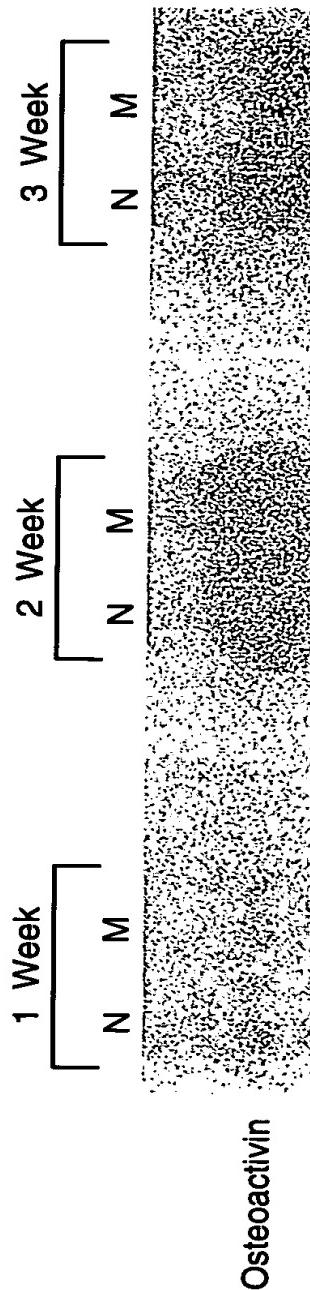


FIG. 7A

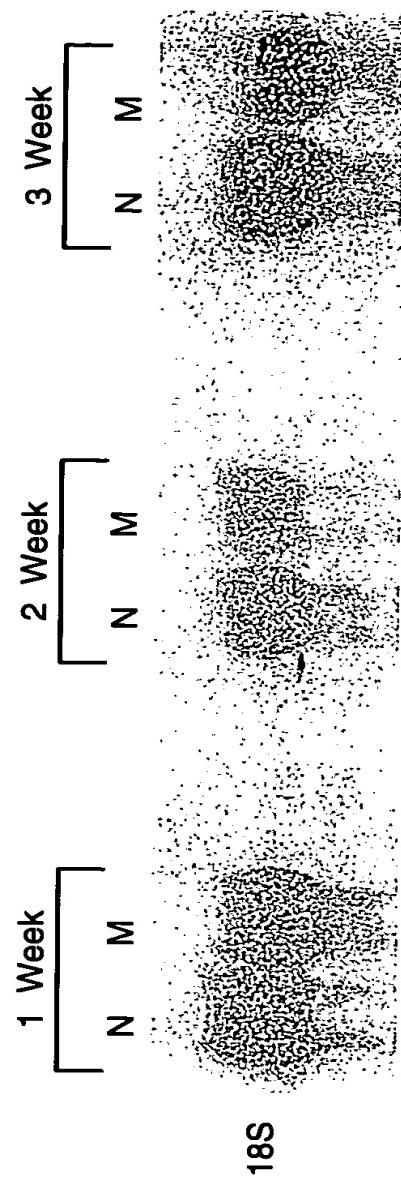


FIG. 7B

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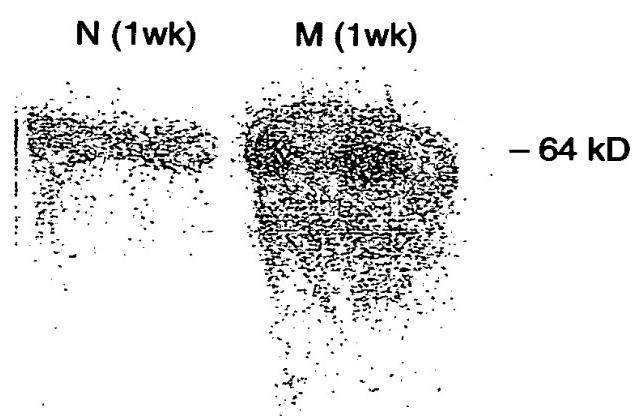


FIG. 8

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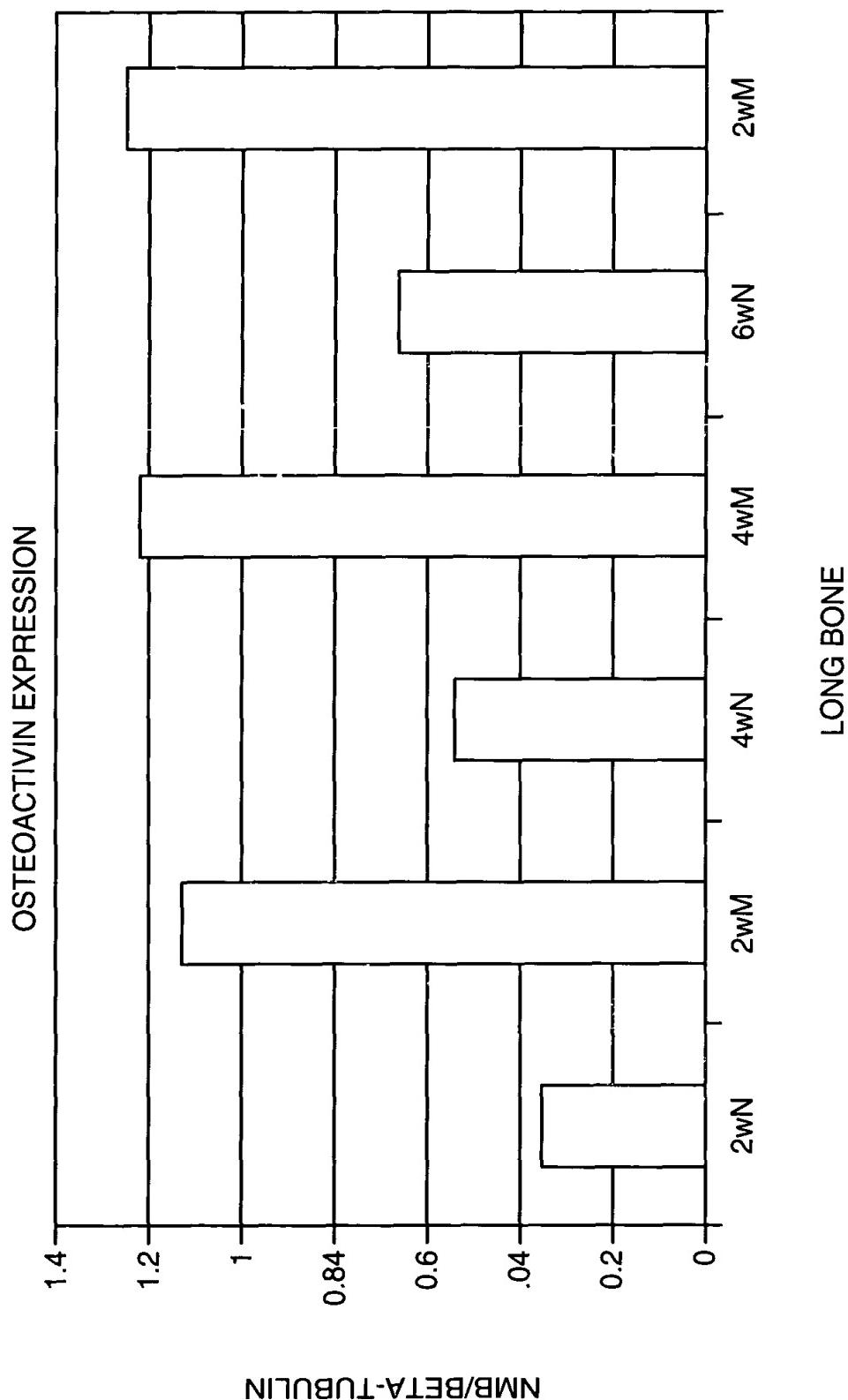


FIG. 9

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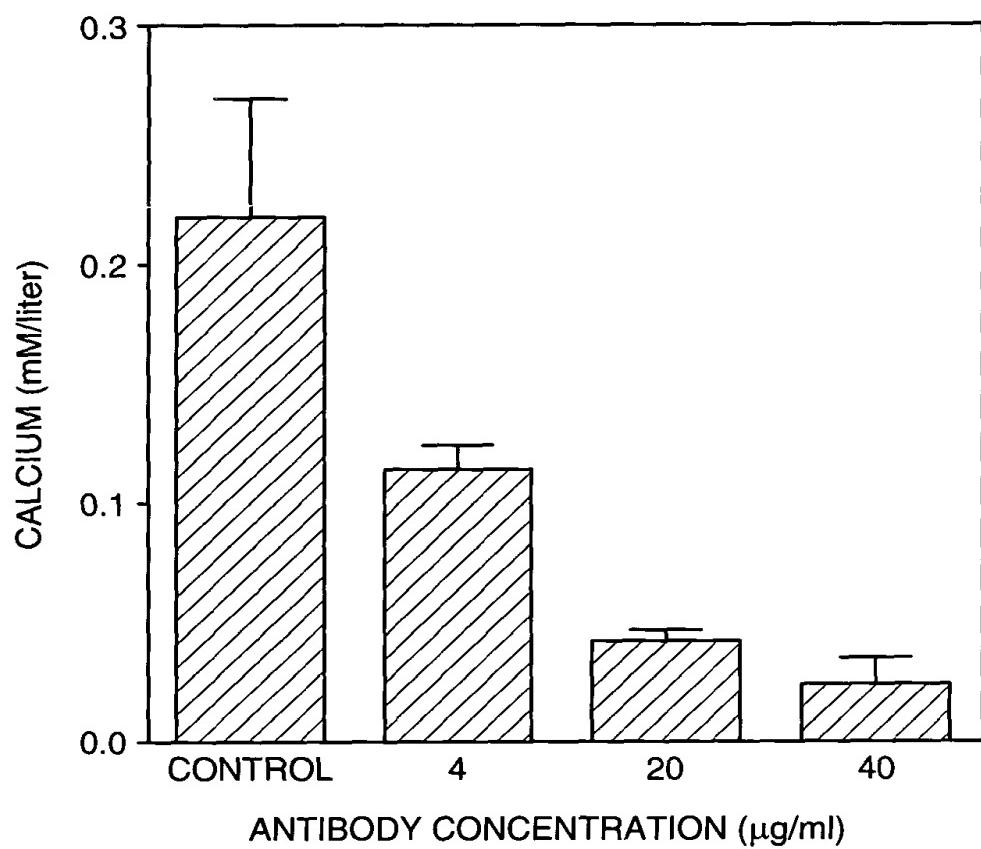


FIG. 10